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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/506,530

12/22/2004

Norikazu Komada

2004-1372a

8691

513 7590 03/05/2009

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EXAMINER

LEE, CYNTHIA K

ART UNIT

PAPER NUMBER

1795

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/506,530	<b>Applicant(s)</b> KOMADA ET AL.	
	<b>Examiner</b> CYNTHIA LEE	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 3,5,6,14,15,21,23,24,27,29,33,35 and 36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,7-13,16-20,22,25,26,28,30-32 and 34-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Arguments***

This Office Action is responsive to arguments filed on 11/24/2008. Claims 1-40 are pending. Claims 3,5,6,14,15,21,23,24,27,29,33,35,36 are withdrawn from further consideration as being drawn to a non-elected invention. Applicant's arguments have been fully considered and are persuasive and 35 USC 102 rejection has been overcome. However, upon further consideration, the instant claims are rejected under new grounds of rejection. Thus, claims 1,2,4,7-13, 16-20,22,25,26,28, 30-32, 34,37-40 are non-finally rejected for reasons stated herein below.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,2,4,7-13, 16-20,22,25,26,28, 30-32, 34,37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komada (JP 2000-200614) in view of Wallin (US 5670270).

Komada discloses an electrode of a solid oxide fuel cell wherein the electrode comprises a skeleton constituted of a porous sintered compact having a three dimensional network structure, the porous sintered compact being made of an oxide ion conducting material and/or a mixed oxide ion conducting material;

grains made of an electron conducting material and/or a mixed oxide ion conducting material are adhered onto the surface of said skeleton; and

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said grains are baked inside the voids of said porous sintered compact under the conditions such that the grains are filled inside the voids (Komada's claim 1).

The electrode wherein said porous sintered compact is made of a material which has a composition represented by the following formula  $\text{Ln}_{(1-x)}\text{A}_x\text{Ga}_y\text{Z}_y\text{B}_2\text{ZrO}_3$  (see Komada's claim 2)

Regarding claim 7, The electrode of a solid oxide fuel cell wherein said grains are made of at least one selected from a group of the materials based on  $\text{LaMnO}_3$ ,  $\text{LaCoO}_3$ ,  $\text{SmCoO}_3$  and a  $\text{PrCoO}_3$ , and the electrode is an air electrode (Komada's claim 7).

Regarding claim 8, An electrode/electrolyte laminate for a solid oxide fuel cell, wherein the electrode is integrally formed on one surface of an oxide ion conducting, dense solid electrolyte layer (Komada's claim 8).

Regarding claim 9, An electrode/electrolyte laminate for a solid oxide fuel cell, wherein the electrode is integrally formed on both surfaces of an oxide ion conducting, dense solid electrolyte layer (Komada's claim 9).

Regarding claim 10, An electrode/electrolyte laminate for a solid oxide fuel cell, wherein the electrode is integrally formed on one surface of an oxide ion conducting, dense solid electrolyte layer; and the electrode is integrally formed on the other surface of the oxide ion conducting, dense solid electrolyte layer (Komada's claim 10).

Regarding claim 11, The electrode/electrolyte laminate for a solid oxide fuel cell wherein the skeleton of the electrode and the solid electrolyte layer are made of the same material or the same type of material (Komada's claim 11).

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Regarding claim 12, A solid oxide fuel cell, wherein the fuel cell comprises an air electrode and/or a fuel electrode each consisting of the electrode according to claim 1 (Komada's claim 12).

The fuel cell of Komada is a laminate because the electrode/electrolyte layers have been sintered [0019].

Komada discloses that the grains are adhered to the surface of the pores, but does not disclose that the grains are filled inside the voids (Applicant's claim 1). Wallin teaches of filling the pores of a solid oxide fuel cell electrode with electrocatalyst, such as  $\text{PrCo}_3$  (5:60). The electrocatalyst is present to efficiently promote the desired electrochemical reaction(s) within the electrode (3:55-57). The electrocatalyst is incorporated into the pores by infiltrating the network with a solution or dispersion of an electrocatalyst precursor and heating the infiltrated network under conditions sufficient to form the corresponding electrocatalyst (3:25-30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to disperse the electrocatalyst particles of Wallin to the pores of Komada to promote the desired electrochemical reactions within the electrode, as taught by Wallin. Wallin teaches that the electrocatalyst promotes electrochemical reactions, thus recognizing that the presence of the electrocatalyst, is a result effective variable. It has been held by the courts that discovering an optimum value or workable ranges of a result-effective variable involves only routine skill in the art, and thus not novel. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). See MPEP 2144.05. It would have been obvious to one of ordinary

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skill in the art at the time the invention was made to add the electrocatalyst of Wallin to fill the pores of Komada depending on the amount of desired reaction in the electrode.

***Response to Arguments***

Applicant's arguments filed 11/24/2008 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Lee whose telephone number is 571-272-8699. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cynthia Lee/

/PATRICK RYAN/

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Examiner, Art Unit 1795

Supervisory Patent Examiner, Art  
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